

09/893,789
YO920010315US1
YOR.292

12

REMARKS

Claims 1-17, 22-39, 44-45, and 47-55 are all the claims presently pending. Claims 18-21, 40-43, and 46 have been canceled without prejudice or disclaimer. New claims 48-55 have been added to more completely define the invention.

Claims 1-17, 22-39, 44-45, and 47 stand rejected under 35 U.S.C. 101 as allegedly being directed to non-statutory subject matter and on prior art grounds.

Independent claims 1, 22, 23, 44, 45 and 47 have been amended to clearly recite that the method is computer-implemented method. It is noted that a "system" is per se statutory subject matter. However, to speed prosecution, the system has been amended to refer to a "computer system." It is noted that the signal bearing medium claims already recited that the method was executable by a digital data processing system. However, to expeditiously overcome the Examiner's rejection, such claims have also been amended to recite "computer-implemented" method.

With respect to the prior art rejections, claims 1-17, 22-39, 44-45, and 47 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Egger, et al. (U.S. Patent No. 6,233,571).

It is noted that the claim amendments herein are made only for more particularly pointing out the invention, and not necessarily for distinguishing the invention over the prior art, narrowing the claims, or for any statutory requirements of patentability.

Further, it is noted that, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during

09/893,789
YO920010315US1
YOR.292

13

prosecution. Thus, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

This rejection is respectfully traversed. Indeed, Applicant submits that all of the pending claims are patentable over the prior art of record.

I. THE CLAIMED INVENTION

Applicant's invention, as disclosed and claimed (e.g., as exemplarily defined in independent claim 1) is directed to a computer-implemented method (and system) of indexing data blocks according to a collection of subject words, which includes constructing a N-dimensional coordinate space, wherein N is a cardinality of the collection of subject words.

Independent claims 22, 23, 44, 45, and 47 recite combinations which include the above limitation that N is a cardinality of the collection of subject words.

With these aspects, the invention provides a new navigation pattern of the present invention which is referred to herein as "*Spatial Navigation*" (see application at pages 12-13). It is noted that this navigation model is not limited to the navigation of data in the Web, which implies the traversal of HTML links. It can be used in any kind of data base. Further, it can also be used to navigate documents in the World Wide Web *without* relying on the traversal of Web links.

Thus, in the invention, a method (and system) are provided in which data blocks are organized according to a spatial function derived from the metadata and hyperlink information which is contained within each block.

09/893,789
YO920010315US1
YOR.292

14

The spatial function used in the data organization method is exemplarily derived from a distance function which represents a measure of the relevance of any two data blocks indexed in the system. This method has applications in the fields of data mining and information retrieval and can also assist in the navigation and retrieval of data blocks stored in the World Wide Web (WWW).

Thus, for example, the invention allows mapping any document into a spatial coordinate such that the spatial coordinate can be viewed according to the content of the document. If two documents are in close proximity in the physical plane, then the two documents are related (e.g., relevant to one another). Thus, the search engine operates by mapping into spatial coordinates all of the pages which are taken in (e.g., via a crawler process scanning Web pages or the like, etc.), and calculates the coordinates of the page in the spatial plane.

Hence, when a user poses a query for some page, the system begins at the insertion point and "inserts" the user into this virtual space in a certain coordinate according to the search criteria that was stipulated. At this time, the new paradigm for retrieving the document in the spatial plane according to the invention is performed such that a radius is calculated from the insertion point (based on the search criteria) and a proximity list is generated. The proximity list indicates the document(s) which are adjacent (near the spatial plane/coordinates) the insertion point.

It is noted that the invention uses a term-by-document matrix, but now with the present invention every row is associated with each other. In contrast, the rows in the conventional techniques are looked at in isolation (e.g., look at "TBM" alone and determine which documents

09/893,789
YO920010315US1
YOR.292

15

have high counts, look at a second row for "XYZ" and determine which documents have a high score, etc.). However, as discussed below, the invention relates every row to one another.

For example, as discussed in the application at page 12, assuming a first row is "IBM", a second row is "Patents", a third row is "filed", and a fourth row is "Sun".

In such an example, a page which relates to IBM and patents, would have a very low count. However, if a second page included all of the patents in the world, then the count would be very high since not only IBM's patents are being looked at.

However, because the count for the word "Sun" is higher in the second page, this makes the second page more distant than the first page which related only to IBM. Thus, the invention uses terms, not necessarily asked for, to relate any two documents. Thus, a direction of a user's interest can be measured by correlating all of the terms used.

Such features as defined by the claimed invention are not taught or suggested by any other prior art of record.

II. THE PRIOR ART REJECTION

A. The Egger et al., Reference

Egger discloses a method for indexing, searching and displaying data. However, Egger fails to teach or suggest a method of indexing data blocks according to a collection of subject words, which includes "*constructing a N-dimensional coordinate space, wherein N is a cardinality of the collection of subject words*", as defined by independent claim 1 and the other independent claims.

09/893,789
YO920010315US1
YOR.292

16

That is, Egger fails to teach or suggest constructing a N-dimensional coordinate space, wherein N is the cardinality of the collection of subject words. Indeed, an important aspect of the claimed invention is that a coordinate space of N dimensions is built, where N is the number of subject words. Neither Egger et al. Nor any of the other prior art of record build such a coordinate space.

In Egger et al. at column 12, lines 40-45 (i.e., cited by the Examiner in page 3 of the Office Action), the concept of a node 2008 is introduced. The node 2008 can be "a document, a section of a document . . . or an idea or concept such as a topic name". However, the node concept is not used by Egger et al. to construct a coordinate space.

In column 18, lines 32-40 (also cited by the Examiner), Egger teaches the utilization of an "n by n" Opinion Pattern Matrix.

First of all, it should be noted that the number "n", which determines the cardinality of the matrix, is obtained from the number of "textual objects" that are to searched, as noted in column 16, lines 66-67, and NOT from words or terms.

Therefore, the Opinion Pattern Matrix is simply used to represent the similarity of any two documents in the system, as determined by a complex procedure. The "n by n" matrix is a two-dimensional matrix, and cannot be considered a N dimensional coordinate system, as in the claimed invention.

The Examiner also cites to column 16; lines 4-12 of Egger et al. However, in this passage, Egger teaches that a similarity function can be obtained from estimating the Euclidean distance of any two rows of a matrix F, which is again a two-dimensional "n by n" matrix. This

09/893,789
YO920010315US1
YOR.292

17

estimate is equivalent to a vector distance, where each row is considered a vector, and this is common in the art.

However, in Egger's system, this does not constitute a N dimensional coordinate system for documents, given that each document is itself represented as a fixed column in the matrix. Even if one considers each row in the matrix as a vector in space, this arrangement cannot be considered an N-dimensional space because the rows are linearly dependent. That is, the space is not orthogonal.

The difference can be simply explained as follows. In Egger et al., each row of the matrix represents the relationship of one document with all the other n-1 documents in the system.

In contrast, in the present invention, each document is represented as a vector which has a position in a coordinate system of N key words. The relationship is INDEPENDENT of any other document.

The advantages of the inventive system are quite significant. In the inventive system, a document can be added to the coordinate space without impacting the measurements of any other document. In Egger's system, the addition of a single document would require the entire recomputation of the all the "n by n" matrices.

As for dependent claims 3 and 4, the procedure outlined in column 18, lines 32-45 of Egger et al. (on which the Examiner relies) is different from the present invention for the reasons outlined above.

The remaining claims are patentable for similar reasons. That is, Egger fails to teach or suggest using a N dimensional coordinate space, where N is the number of key words.

09/893,789
YO920010315US1
YOR.292

18

In view of all of the foregoing, the claimed invention is patentable over Egger et al., either alone or in combination (arguendo) with any of the other prior art of record.

III. FORMAL MATTERS AND CONCLUSION

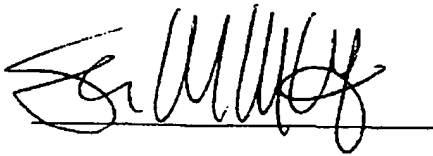
In view of the foregoing, Applicant submits that claims 1-17, 22-39, 44-45, and 47-55, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,

Date: 4/13/05



Sean M. McGinn, Esq.
Reg. No. 34,386

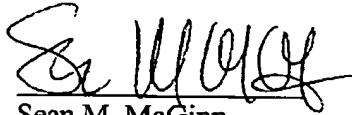
McGinn & Gibb, PLLC
8321 Old Courthouse Rd. Suite 200
Vienna, VA 22182-3817
(703) 761-4100
Customer No. 21254

09/893,789
YO920010315US1
YOR.292

19

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that I am filing this Amendment by facsimile with the United States Patent and Trademark Office to Examiner Anh Ly, Group Art Unit 2162 at fax number (703) 872-9310 this 13th day of April, 2005.



Sean M. McGinn
Reg. No. 34,386